

Notice of Allowability

Application No.

10/776,197

Examiner

Bruce F. Bell

Applicant(s)

YANG, JEFFERSON YS

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application as received and to the examiners amendment.
2. ☒ The allowed claim(s) is/are 11-15.
3. ☒ The drawings filed on 02/12/04 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/972,606.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached.
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152).
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 8/9/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jun Lee on August 9, 2005.

The application has been amended as follows:

Please change the claims as follows:

Claim 11 (currently amended) A diaphragm pump for a fuel cell, the diaphragm pump is used in an anode stream recirculation system for a fuel cell, the diaphragm pump comprising a wall defining an interior space, a piston provided in the interior space, a diaphragm assembly sealing with the piston and the wall of the diaphragm pump thereby dividing the interior space into two portions, an inlet and outlet opening on one side of the piston, and an atmosphere opening on the opposite side of the piston, which opening enables entry and exit of atmosphere from the interior space.

Claim 12 (currently amended) A diaphragm pump for a fuel cell, the diaphragm pump is used in an anode stream recirculation system for a fuel cell, the diaphragm pump comprising a wall defining an interior space, a piston provided in the interior space, and a diaphragm assembly sealing with the piston and the wall of the diaphragm pump thereby dividing the interior space into two portions; and an elastic device resisting against a bottom of the piston to provide an upward force to the piston; the

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piston is adapted to move between a first position and a second position depending on variation of pressure on two sides of the diaphragm assembly and the force provided by the elastic device.

Claim 13 (currently amended) A diaphragm pump for a fuel cell, the diaphragm pump is used in an anode stream recirculation system for the fuel cell, the diaphragm pump comprising a wall defining an interior space, a piston provided in the interior space, and a diaphragm assembly sealing with the piston and the wall of the diaphragm pump thereby dividing the interior space into two portions; and at least one sensor to sense the piston.

2. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach and/or suggest a diaphragm pump having an inlet and outlet, an elastic device or sensors being used in combination with a diaphragm assembly which seals with the piston and the wall of the diaphragm pump. Prior art devices having a diaphragm or a piston but typically not both that seal with the wall of the vessel, a syringe has both, however, a syringe is a closed vessel and therefore, continuous flow or fluid can not be attained. Therefore, the instant diaphragm pump as set forth in the instant claims of Yang are not taught or suggested in the prior art devices.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB
August 22, 2005


Bruce F. Bell
Primary Examiner
Art Unit 1746